

TRANSACTIONS
OF THE
PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting held October 1, 1907.

TENDON TRANSPLANTATION FOR CONGENITAL
CLUB FOOT.

DR. RICHARD H. HARTE presented a boy, born in February, 1901, with double congenital equino-varus. He came under the care of Dr. G. G. Davis at the Orthopaedic Hospital, when 3 months of age. Dr. Davis did tenotomy of the tendo-Achillis of both feet, and partially corrected the deformity. The child was then sent to his home in Hazleton, Pa., and next applied to the Orthopaedic Hospital in December, 1903, when he was under the care of Dr. Barton Hopkins, who found such a recurrence of the deformity that he did a cuneiform tarsectomy on both feet. He resorted to this operation only after failing to maintain a good position by the use of forcible manipulations and the use of plaster casts. The patient was sent home two months later, February, 1904, wearing braces. He was readmitted, coming under Dr. Harte's care March 17, 1905, with recurrence of the varus deformity in both feet. Without his braces he could not walk at all. On April 6, 1905, Dr. Harte did astragalectomy on the left foot, combined with tenotomy of the plantar fascia and the tendo-Achillis. On May 18, 1905, the same operations were repeated on the right foot. By these second bone operations it was hoped that a recurrence of the deformity would be prevented, as the foot came into very good position. The patient was again sent home wearing braces. Six months later, January 11, 1906, he was again admitted to Dr. Harte's service at the Orthopaedic Hospital, with recurrence of the varus deformity. Both feet were forcibly stretched, the patient being etherized, on January 12, 1906. The plaster casts were finally removed March 15, 1906, and the feet treated by

massage and overcorrection (without ether) daily for two months. New braces were applied in May, 1906, and the boy was again sent back to his home June 19, 1906, with his feet in very good position. Six months later, in January, 1907, he was again readmitted, the varus deformity having recurred to the extent shown in Fig. 1. On January 16, 1907, Dr. Harte did open tenotomy of all structures in the contracted soles of both feet, dividing tendons and fascia down to the bones. These wounds were left unsutured, and plaster casts applied. On February 18, 1907, both feet were stretched (ether) manually, and again put up in plaster. On March 9, and again on April 13, 1907, both feet were forcibly overcorrected by means of Hopkin's osteoclast, and Davis's tarsoclast. The feet now could easily be maintained in the overcorrected position by the pressure of one finger. On May 23, 1907, tendon transplantation was done, the tibialis anticus being separated from its attachment in each foot, and sutured to the tendon of the peroneus brevis at its insertion into the tuberosity of the fifth metatarsal bone. On July 10, seven weeks after this operation, the casts were removed, but as a matter of precaution new casts were applied for several weeks longer.

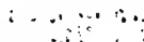
The boy now wears shoes with the sole extended and raised on the outer side, to throw the foot into a position of overcorrection (slight valgus), and with stout instep straps, to keep the heel of the foot well down in the shoe. The transplanted tendons by their action effectually prevent any tendency to the reproduction of the varus deformity, and it is hoped that at last the patient is permanently relieved of his deformity, as well as of the necessity for wearing ponderous and cumbersome braces. Figs. 2 and 3 show the present appearance of the feet, as well as the style of shoes worn.

DR. GWYLYM G. DAVIS said that the main interest in this class of cases to him was the question of the transplantation of tendons for congenital club-foot. The transplantation of tendons for paralytic deformities is well known, but for congenital deformities it is not so much practiced. The cause of congenital deformity is unknown; the cause of paralytic deformity is of course the paralysis, and if this paralysis is not recovered from it produces an obstinate lameness which is permanent. Therefore, if one transplants an active tendon to the opposite side and judges correctly the relative amount of strength of the two sides, then

FIG. 1.



Before tendon transplantation; congenital equino-varus, second relapse after evineiform tarsectomy and astragalectomy.



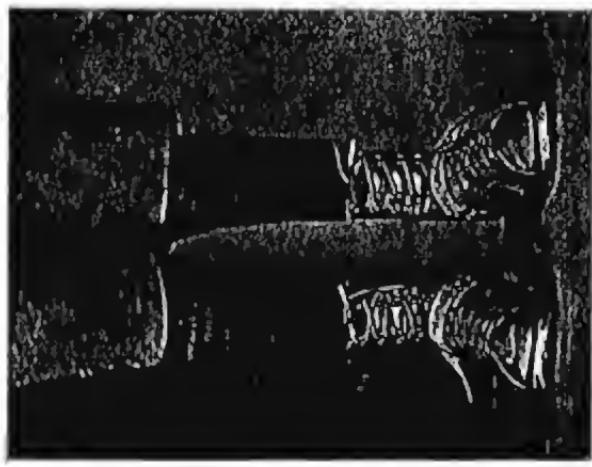
Shoes with soles extended and raised on outer side; also instep strap.



FIG. 2.

After tendon transplantation: tibialis anticus transplanted to insertion of peroneus brevis.

FIG. 3.



there results a balanced foot. But in a congenital case an entirely different thing is to be dealt with. There is contraction of tendons on one side and a lengthening of tendons on the other side, but the muscles of the lengthened tendons do not give the reaction of degeneration. They are not paralyzed tendons; therefore, if one can succeed in straightening the foot and keeping it straight with massage, electricity and exercise, then one gradually gets a restoration of function, and, theoretically, one should have the foot well balanced, and have an apparently normal foot as a result.

In his experience every now and then a case comes up, such as this boy, in which, even though the foot be kept in good position, the lengthened muscles do not contract and regain the tonicity and strength and power of the muscles on the contracted side. Therefore, in certain cases, even of congenital club-foot, surgeons are fully justified in transplanting the tibialis anticus muscle from the inner towards the outer side of the foot, and then allowing the child to get around. If, as the child grows older, it is found the transplanted anterior tibial and the peroneal muscles produce a preponderance of power on that side, one can put the anterior tibial back again. Therefore as a sort of temporary expedient he believed in a certain few selected cases in the transplantation of tendons even for congenital deformities.

LUXATION OF SPINAL VERTEBRAE.—GUNSHOT WOUND OF BRAIN.

DR. JOSEPH M. SPELLISSY reported four cases of vertebral luxation; and one of gunshot wound of the brain, as follows:

CASE I.—(G. B.) *Luxation of Last Thoracic Vertebra, Kyphotic Deformity, Slight Paralysis; Recovery with Apparatus in Seven Weeks.*

The injury was received March 10, 1907, while working beneath a roof, the supports of which gave way, thus permitting the weight of the structure to come suddenly upon the patient's head and back. He was removed to the Methodist Hospital, where examination discovered posterior deformity, extreme tenderness, and complaint of pain at the junction of the thoracic and lumbar vertebrae. Pain was also referred to the abdomen and posterior regions of both thighs. X-ray examination showed separation of the posterior margins of the vertebrae involved.